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TABLE OF CONTENTS

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ADDRESS

Instruction in Climatology in Medical Schools. *By Robert DeC. Ward*, Cambridge, Mass. 477

ORIGINAL ARTICLES

Hereditary Oedema (Milroy's Disease). A Report of Three Cases. *By Charles F. Painter, M.D.*, Boston, *and Harold C. Bean, M.D.*, Boston. 479
Results of Nerve Injuries Apparently Due to Birth Trauma. *By Eli Friedman M.D.*, Boston. 482
Goitre—With an Analysis of One Hundred Operated Cases. *By A. M. Rowley, M.D*, Hartford, Conn. 486
On the Severely but not Totally Disabled in Industry, with Special Reference to the One-Armed. *By Leo Eloesser, M.D.*, San Francisco, Calif. 489
The Administration of Ether by an Intravenous Method. *By H. Quimby Galloupe, M.D.*, Boston. 495

BOOK REVIEWS

A Synopsis of Medicine. By Henry Letheby Tidy, M.A., M.D., B.Ch., F.R.C.P. 496
Scurvy, Past and Present By Alfred F. Hess, M.D. 496

EDITORIALS

The Relation of the Expert in Internal Medicine to the General Practitioner. 497
The Missouri Bill for the Registration of Nurses. 498
"Two Bottles A Day Too Much." 499
Medical Notes. 499
News from the District Societies. 502

CORRESPONDENCE

Non-Resident Members of the Massachusetts Medical Society. *Albert S. Hyman, M.D.*, Philadelphia. 503
Liability Insurance for Doctors by the Massachusetts Medical Society. *Eoline C. Dubois, M.D.*, Springfield, Mass. 503
Newburyport Medical Club Deplores Passing of Anti-Vaccinaton Bill by the Senate. *Arthur J. Hewett*, Newburyport, Mass. 504
A Correction. *John T. Bottomley.* 504
Early Registration Urged. *A. S. Legg.* 504

MISCELLANY

The So-Called Cure for Tuberculosis. 503
Resolutions on the Death of Dr. William Fiske Whitney. 503
Notices, Recent Deaths, etc. 504

Address.

INSTRUCTION IN CLIMATOLOGY IN MEDICAL SCHOOLS.*

By **Robert DeC. Ward**, Cambridge, Mass.,

Professor of Climatology, Harvard University.

The relations of climate and health have long been recognized as distinct sub-divisions of medicine and climatology. The term, medical climatology, has long been accepted as an appropriate designation for this border-line subject. Although climatology has a wide range of applications, to agriculture, to industry, to commerce, and the like, but few sub-divisions of its general field have as yet received such special designations. While a great deal of important work in medical climatology has been accomplished, in the United States as well as in other countries, there is still need for extended research in this field. The chief difficulty in the way, as it appears to me, is the fact that so few medical men have an adequate knowledge of what meteorology and climatology really include, and so few students of the earth's atmosphere are in any way competent to deal with the physiological and medical aspects of their science. This clearly presents a situation in which, with rare exceptions in the case of physicians who have a thorough knowledge of climatology, or of climatologists who are at the same time physicians, really sound and useful work can only be accomplished by coöperation. Trained physicians, with special interest in and appreciation of the laws and scope of climatology and trained climatologists, with at least a good working knowledge of the history and the causes of the more important diseases, should work together.

In the United States, the American Climatological Association, the name of which was recently changed to American Climatological and Clinical Association, has for years been active in the study of medical climatology, and its publications contain a large number of important contributions on various aspects of the subject. Further, we have been fortunate in having, in this country, some practising physicians whose knowledge of climate has qualified them to deal with medical climatology as experts in the science of the atmosphere. In this connection, special mention should be made of the work of Dr. Guy Hinsdale, who has, from the start, been one of the most active members, and recently president of the American Climatological and Clinical Association, and whose numerous publications have been of great value in promulgating sound doctrine where sound doctrine has been distinctly needed. Dr. Hinsdale's recent volumes, prepared in collaboration with Dr. F. Parkes Weber, are a monumental piece of work, far too little known among professional meteorologists and climatologists.[1]

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* Excerpts from a Presidential Address on "Climate and Health with Special Reference to the United States," read before the American Meteorological Society, at Chicago, Ill., Dec. 29, 1920.

The late Dr. S. Edwin Solly, long a practising physician in Colorado Springs, also made a valuable contribution to the literature in his "Handbook of Medical Climatology," which may well find a place on the shelves of working meteorologists who aim to keep abreast of the times in the matter of the larger relations of their science to health.[2] Mention should also be made of the work of Dr. Isaac M. Cline, at present Section Director of the United States Weather Bureau at New Orleans, La., a doctor of medicine as well as a professional meteorologist, whose writings clearly indicate what can be accomplished when a knowledge of medicine and of climatology are combined in one investigator.

If the names of many others are here omitted, it is not because of failure to appreciate their work, but partly for lack of time and partly because it is in no way the purpose of the present Address to give an historical or bibliographic account of the literature.

While the United States has contributed a notable share to the advance of medical climatology, there is need of effective and widespread coöperation between our medical men and our climatologists, in thorough, scientific, progressive research into the many and varied relations of climate and health. The American Meteorological Society may well give special attention to this matter. It should, by coöperation with the American Climatological and Clinical Association, and with medical men generally, endeavor to advance investigation and sound learning along these lines.

The large majority of medical men know little about climatology, for the reason that little or no attention is paid to this subject in our medical schools. Some years ago I sent a short questionnaire to the heads of the leading medical schools in the United States, asking what instruction in any aspects of climate was being given, or contemplated, in their schools. It appeared that at that time very little climatology was being taught, even in its more obvious and direct relations to disease. The situation has not changed since then, so far as information at my disposal goes. In a few sporadic cases only were short courses of lectures on some aspects of climatology being given. The reasons for this unfortunate situation are two: (1) the program of the strictly medical subjects is already so crowded that there is thought to be no room for another subject, and (2) the lack of competent teachers to give the instruction in the proper way. About twenty years ago I offered to give, without compensation, a course of lectures on climatology at the Harvard Medical School, but the offer was declined on the ground that the instruction could not be required of the students because of the already over-crowded curriculum, and because, if the course were optional, few if any students would elect it. I hasten to add, in justice to the progressive policy of the Harvard Medical School, that when our Graduate School of Tropical Medicine was established, a few years ago, the list of studies included a course of about fifteen lectures on tropical climatology. This instruction, which it is my privilege to give, has, I believe, proved interesting and valuable to the students, and it has certainly been a most inspiring task to the teacher.

Because of this general lack of climatological instruction in our medical schools, it results, inevitably, that only an occasional physician who, because of his natural interest in climate, or because his special practice forces him to acquire some knowledge of climatotherapy, becomes in any way an authority on this subject. To the vast majority of medical men, it is safe to say, climate has a very vague meaning. They think of it in some such terms as "a dry, bracing climate"; or "a mild, relaxing climate," or "a climate with marked and sudden weather changes." If they desire numerical data, they are usually satisfied with the mean annual or mean seasonal temperatures, the mean annual rainfall, and with some general information regarding the relative humidity, or the cloudiness. They do not realize, for they have had no opportunity to learn, what a varied complex climate really is; how large an amount of numerical data is necessary if a complete picture of a climate is gained. Meteorology, by means of its great body of statistical information, patiently and carefully collected throughout many years of faithful observation, is ready to supply the medical profession with all the information which is available, and is further not only willing but anxious to secure any further details which physicians need, if only the exact need is made clear. Far too few physicians realize the importance, in the practice of their profession, of many of the standard climatic data which are now available for most health resorts. It is unnecessary on this occasion, to make anything like a complete list of such data. The following may be mentioned as illustrations: the intensity and duration of bright sunshine; the periodic and non-periodic diurnal range of temperature; the mean diurnal variability of temperature; mean temperatures of the different hours of the day; frequency of temperature changes of certain amounts; relative humidity of the different hours, or at least of a morning, afternoon and evening hour; number of rainy days for each month; duration of snow cover; number of days with snowfall; number of clear, fair and cloudy days, by months; number of days with fog; distribution of fog throughout the 24 hours; daily period of wind velocity; occurrence and distribution, in time, of any special or local hot or cold winds, and so on. These are mentioned, in passing, as examples of data which are all more or less critical in determining the climatic characteristics of any locality; which have important relations to health, and which are usually wholly disregarded by the majority of physicians.

A few years ago, in a course of lectures on the principles of climatology, given before a medical audience in one of our large cities, I was bold enough to say that the trouble with my hearers was that they knew practically nothing about climatology beyond a general idea regarding the relations of climate to the treatment of tuberculosis, and that they were, therefore, not in a position to give the general run of their patients sound advice as to the choice of the best climate for the treatment of other diseases. There was a distinct reaction on the part of my audience to this very frank and somewhat impolite challenge, and a good deal of murmured comment, but I could detect no evidence of any general feeling that the statement was exaggerated. At the close of the lecture, one of my hearers, a medical practitioner of more than nation-wide reputation as a specialist on lung diseases, said to me: "You gave the medical profession a hard knock when you said that, but it is true, and we deserve it."

It seems to be clear, then, that it is our business to impress upon the authorities of our medical schools the importance of offering some instruction in the principles of climatology as a part of the regular curriculum for all medical students. There are many professional meteorologists in the United States who are competent to give this instruction if, among the available teachers in the medical faculties there should happen to be none who feel themselves qualified to do the work. That we must, in most cases undoubtedly, give such instruction without any remuneration will not, I feel sure, in any way militate against our doing our part in this important work, if opportunity offers.

REFERENCES.

[1] A System of Physiologic Therapeutics. Edited by Solomon Solis Cohen, M.D. Vols. iii and iv. Climatology: Health Resorts—Mineral Springs. by F. Parkes Weber, M.D., with the collaboration for America of Guy Hinsdale, M.D., 8 vo., Philadelphia, Pa., P. Blakiston's Sons & Co., 1901. (Book I. Principles of Climatotherapy—Ocean Voyages—Mediterranean, European and British Health Resorts. Book II. Health Resorts of Africa, Asia, Australasia and America—Special Therapeutics, pp. 86-218 on the United States, and pp. 245-387 on Climatotherapeutics. In Vol. iv, "will be found what is believed to be, on the whole, the most nearly complete account of the health resorts of the United States yet published.")

[2] S. Edwin Solly: A Handbook of Medical Climatology, Embodying its Principles and Therapeutic Application with Scientific Data of the Chief Health Resorts of the World. 8 vo. Philadelphia, 1897 (pp. 185-354 on North America).

Original Articles.

HEREDITARY OEDEMA (MILROY'S DISEASE). A REPORT OF THREE CASES.

BY CHARLES F. PAINTER, M.D., BOSTON,
AND
HAROLD C. BEAN, M.D., BOSTON

IN 1892, under the title, "An Undescribed Variety of Hereditary Oedema," Dr. W. F. Milroy[1] brought to the attention of the medical profession a type of case of which no previous accounts had ever been published. He sent his report to Professors William Osler and William H. Welch, of Baltimore, who stated that this disease was absolutely new to them and that they were unable to find any literature on the subject.

Milroy's case was typical of the disease and interesting both from the pathological, as well as the geneological standpoint. He presented the case of Mr. H., a middle-aged clergyman, whose legs were obviously enlarged from birth, but caused him no inconvenience other than local weight and clumsiness. The most interesting facts, however, were the apparent hereditary characteristics which were fortunately found in this particular case, a table of which follows:

In this list there are six generations comprising ninety-seven individuals, twenty-two of whom had this deformity. Of the twenty-two cases, twelve were males, seven were females, and the sex of three was unknown.

It was also noted that in later generations the

TABLE OF GENEALOGY OF MR. H., WITH LESIONS MENTIONED

I	II	III	IV	V	VI
Relative of Mrs. H. (One enlarged leg)	Joseph W. Both legs enlarged	1. Unknown			
		2. One leg	6 children 3, foot each	11 children 2, foot each	
		3. Normal	8 children 1, foot	9 children normal	
		4. One leg			
		5. Normal	5 children 1, leg	9 children 1, both legs 1, a foot	
		6. Both legs	4 children 1, leg	4 children 1, foot	6 children 1, a foot 1, both legs
		7. One foot and ankle	3 children 1, foot		
		8. Unknown			
		9. One foot and leg	4 children 1, (the applicant) both legs enlarged	13 children normal	2 children normal

same frequency prevailed, but the oedema was much less in extent. Reversion to familial types is seen after a normal generation.

There were three exceptions to the congenital characteristic of the disease:

1. Normal extremities until, in adult life, a carriage accident caused the enlargement of one leg.

2. Normal extremities until the twelfth year when, without any obvious injury, an ankle became red, painful, and swollen. The first two symptoms rapidly subsided leaving a permanently enlarged ankle.

3. An enlarged foot until maturity, when testicles became involved. One testicle was so large that it was removed by operation whereupon the foot returned to normal size and remained so.

Dr. William Osler[2] reported Dr. Milroy's case in his book, "Modern Medicine," but does not cite any cases of his own.

In 1898, Meige[3] described eight cases appearing in four generations.

In 1902, Rollston[4] reported three cases in two generations.

In 1908, Hope and French[5] reported thirteen cases occurring among forty-two individuals in five generations, some of these cases appearing in adult life and associated with sudden onset with fever, pain and redness. No new theories were advanced as to cause or treatment. All cases apparently showed the same symptoms.

Since 1908 little has been heard of further cases, nor has much been said regarding the disease itself.

5738, Miss L., July 6, 1920. A strong and unusually healthy Irish girl appeared at the office with her right leg very much enlarged, causing her much mechanical inconvenience. This condition had come on gradually from puberty; beginning in the lower leg and extending into the thigh. The foot was not involved. She was otherwise perfectly well and had had no injuries which could have caused this growth. At no time had she ever been in the tropics. She came from Ireland to New York, and thence to New England, where she had lived for some years. She worked as a cook in a family. She knew of no other instances of a similar nature in her family.

Local Examination—The right leg, beginning at the ankle and extending well up to the groin, was symmetrically about four inches larger in circumference than the left. It was hard and pitted with difficulty. The circulation was somewhat sluggish and the foot was cold. There was no indication of varicose veins.

This patient was referred to an internist who, after careful examination, was unable to find any cause for the enlargement.

She was advised to bandage the leg and to have periodic courses of massage. No benefit had resulted when last seen.

5765, Miss W., July 20, 1920. A young Jewess of 20 years, who has always been well up to five years ago, and so far as any constitutional symptoms are concerned, is still perfectly well.

Five years ago she went to bed one night perfectly normal and woke in the morning with the left lower leg considerably swollen and the thigh moderately so. There was no pain or congestion. It gave her no particular inconvenience. It gradually increased in size for a few months. At present she tires easily because of the weight which she is obliged to carry around. No family history obtainable.

About four years ago she entered the Peter Bent Brigham Hospital in Brookline, Mass., for observation. The examination was entirely negative. The Wassermann was negative. She states that at the present date her leg is somewhat smaller than usual, but that frequently, without warning, it swells to enormous size.

Local Examination—Left leg, at mid-thigh is 19½ inches in circumference, as against 18¾ on the right; at patella is 16¼ as compared with 15 inches on the right; at the calf is 16¾ inches as against 14¼ inches on the right. The foot is 10⅜ inches over the instep as against 9½ inches on the right. Abdominal examination was negative. X-ray of the pelvis was negative; of the affected leg was normal except the increase in the shadows of the soft parts. She was advised to bandage and massage the leg, but no relief was obtained from this treatment.

5782, Mr. W., July 30, 1920. A middle-aged man who states that eight years ago he began to notice a slight increase in the size of his right leg and that the growth has increased slowly ever since. It sometimes swells to enormous size so that a 35-inch pant at the knee is required to hide the deformity. There is no pain and only a discomfort due to size and weight. Some months previous to the first appearance of this trouble he had typhoid fever. He was sick for a month and then developed pneumonia, but recovered quickly. He was a ball player when young, and received many hard knocks in and about the knee-joint, but was never seriously injured. To the best of his belief there were no lesions of this kind in his family.

Local Examination—Right leg slightly larger than the other because canvass stocking which he has worn for two years has kept the leg within normal limits. Pits very slightly on pressure. No congestion. No varicosities. There is a definite brawny sensation over the whole leg. Advised to massage and to use a vibrator. Not seen since.

These three cases, the only cases so far available, appeared at this office within a period of a month. All three cases were apparently normal at birth. Two cases appeared about the time of puberty. One case appeared late in life, that is, at the age of thirty-five. One case developed over night and the other two very gradually. All three gave the same complaint, namely, mechanical discomfort. All three were perfectly healthy. But, unfortunately, all three were unable to give any light on the question of heredity.

Race, sex, age, and climate seem to be no factor in this malady. Undoubtedly, if family pathology could be traced back two or three generations, more, probably many such cases could be found.

Dr. Osler placed this disease in the category of angioneurotic oedemas. These are allied in so far as they are probably hereditary and are oedemas without the usual causes, such as cardiac, renal, etc., but they differ in many ways. In the first place, this type of oedema is confined to the lower extremities. It is also permanent where found, and is not associated with any systemic disturbances. Finally, hereditary oedema has been unassociated so far with any neurosis. Certainly the three cases reported above were far from neurotic. Previous reports are also conspicuous because of the absence of any mention of nervous phenomena.

At the time of writing, another case has appeared at this office which may be included among border line cases; that is, between the angioneurotic type and the hereditary disease.

This was a middle-aged Jew who had worked hard all his life, being constantly on his feet during the day. About three years previous to entry he had two or three weeks of marked swelling of his left lower leg without pain or redness. No treatment was given, but the leg returned to normal proportions quite suddenly. About a month previous to entry he began to experience rather intense pain through his left shin and gradually the lower leg, not including the foot became quite wsollen. He noticed that the leg enlarges rapidly upon standing. The pain is gradually subsiding but the swelling remains. He has never had any other part of his body affected in this manner. He has always been healthy. He has not noticed any gradual enlargement of his feet or hands.

He states that he only knows about his immediate family, a mother and eight brothers and sisters, all of whom are well and have no enlarged feet or legs.

This patient ha sbeen examined by hree local doctors, without any cause having been found for his oedema.

Local Examination—The left leg from the knee to the ankle is three and one-half inches larger than the right leg, in spite of firm bandaging. There is a definite brawny feel to the whole area. There were no indications of varicose veins. The dorsalis pedis artery is readily felt. The oedema is hard and pits with difficulty. There is no apparent increase in surface temperature.

His hands and feet seem enlarged, but there is no other indication of acromegaly. Patient was given a mixed gland tablet and advised to keep leg firmly bandaged unil some change is noted.

This case is not typical angioneurotic oedema, nor is it possible to say that it is definitely an hereditary oedema, but with the evidence at hand, it favors the later diagnosis and would then fall into the group of cases reported by Hole and French.

CONCLUSIONS.

No theories have been advanced on this subject except heredity. One should not be satisfied with that viewpoint until every other cause has been exhausted. Indeed, heredity cannot be the entire cause, for there must be some weakness or tendency upon which heredity plays its rôle.

The nearest approach one can make in this line is upon the endocrine gland theory. In these days of rock-bottom research, glands are beginning to play a part and, with no other better reason to be discovered, the glandular theory can be applied in these cases.

Staffieri[6] mentions a case of angioneurotic oedema, with which the disease is seemingly associated, in which there was a dysendocrinia with thyroid insufficiency predominating. The only case, which has been reported as hereditary oedema, which could possibly come under this category was one in which there presumably was a testicular hypersecretion. This case was the one reported by Milroy in which a congenitally enlarged foot became normal upon excision of an enlarged testicle. If such cases are congenital, then there must be an inherited insufficiency or hypersecretion of some or all the endocrine glands. However, if this is the case, there should be other manifestations of the disorder. So far, the evidence is lacking.

REFERENCES.

[1] New York Med. Jour., 1892, Vol. lvi, p. 505.
[2] Osler and McCrae, Modern Medicine, Vol. iv, p. 1011.
[3] Presse Medicale, 1898.
[4] Lancet, 1902, Vol. ii.
[5] Quarterly Jour. of Med., 1908, Vol. i.
[6] Revista Medica del Rosario, 1919, Vol. ix.

RESULTS OF NERVE INJURIES APPARENTLY DUE TO BIRTH TRAUMA.

BY ELI FRIEDMAN, M.D., BOSTON.

THE following is a brief summary of 2,000 consecutive neurological cases seen in the Nerve Department of the Children's Hospital. The purpose of this analysis is to find out approximately what percentage of these unfortunates were caused by trauma in labor, either from allowing a difficult labor to go on too long without interference,—the so-called sins of omission; or from interference, as the application of forceps,—the so-called sins of commission.

I have chosen neurological cases because, while every part of the child's anatomy is subject at times to a certain amount of trauma in transit, the nervous system is the one that always suffers. All the vital organs of the child are well protected, while the brain, which is one of the most important ones, has practically very little protection. The head, furthermore, being the largest part of the child, is subjected to the greatest amount of pressure in the process of its passing through the parturient canal and consequently suffers the greatest amount of damage. Injuries to the nervous system, furthermore, result in chronic conditions which can be followed for years, and thus afford a better opportunity for study than simple surgical conditions which are of rather short duration, without, as a rule, leaving any permanent damage.

The cases studied in this series of necessity include only those with comparatively mild injuries to the nervous system. The more serious injuries either result in still births or in death in 24 to 48 hours after birth, and there are a good many of them, as we shall see later. Such children, if they came to the hospital at all, were rushed to the surgical service for decompression operations, and unfortunately very rarely reported for after treatment in the Neurologisal Service. What we shall see in these cases will be a large number of unfortunates who, while apparently but slightly injured at birth, still have enough injury to their nervous system to leave them more or less crippled for life.

Foremost of the injuries to the nervous system, as far as numbers are concerned, are the so-called Erb's or obstetrical paralysis. Of the 2000 neurological cases, 101 belong to this class. This condition, as demonstrated conclusively by John W. Seaver,[1] is caused by an injury to the brachial plexus. Traction with forcible abduction and elevation of the arm such as we find in breech delivery, puts the eighth cervical and first dorsal roots on the stretch, and when there is enough force applied complete tearing of the nerve fibres result. Traction and forcible separation of head and shoulder puts the upper cords, the fifth and sixth cervical roots of the plexus, under tension with similar results. Bullard,[2] W. U., states further that traction of the head in the axis of the body is less injurious than when it is done obliquely; and that asphyxia favors injuries in the plexus because the muscles are completely relaxed and afford very little protection to the nerve structures.

Fortunately the upper arm type is one most common. In this type the muscles of the upper arm, the deltoid, supra spinatus, infra-spinatus, teres minor, biceps, and supinator longus, are the ones involved. Occasionally the serratus magnus coraco brachialis and supinator brevus are involved. The paralysis is then due to the injury of the fifth and sixth cervical roots. In the lower arm, or rather in the whole arm type, as it is very rare to see the lower arm alone, all the muscles of the arm are involved and there is wrist drop as well as atrophy of the small muscles of the hand. In these cases, the fifth, sixth, seventh, eighth, and sometimes the first dorsal are involved. It is very rare to find the lower nerve roots involved without the upper.

The diagnosis is very easy when one looks for it. Within the first few days after birth, the arm or, as very rarely happens, both arms, are found to lie limp by the side. In the upper arm type, which is by far the most common, the arm is kept in inward rotation and adduction, with inability to abduct, elevate, outwardly rotate, or supinate.

The affected extremity is colder and the muscles undergo some atrophy, though never as marked as in infantile paralysis. The reason for this is that practically no muscle loses its complete enervation as it gets some nerve fibres from another segment of the cord so that the trophic disturbance is not so great. The electrical examination will show a reaction of degeneration in the affected muscles, but this examination is not always satisfactory on account of the excessive development of fat in children which (also hides atrophy).

The only conditions we have to differentiate from obstetrical paralysis are fracture and dislocation of the humerus, cerebral palsies and infantile paralysis. Fractures and dislocations can readily be recognized by careful examination, though we must bear in mind that there is at times some subluxation of the head of the humerus secondary to the paralysis of the muscles around the shoulder. Cerebral palsies are usually hemiplegic, involving the one entire side of the body, or diplegic, involving all four extremities and very rarely limited to one extremity. The cerebral paralyses are furthermore of the spastic type with exaggerated reflexes, while Erb's paralysis being of the peripheral type is flaccid with absent reflexes.

Infantile paralysis can be differentiated by the age of onset and only very rarely, when the patient comes late for treatment, is there any difficulty in diagnosis.

The treatment of these cases belongs mainly to the orthopedic surgeon and I will not dwell on it, but the advice to start treatment early before contractures and deformity result, lies entirely with the obstetrician. Unfortunately there is a tendency on the part of the obstetrician to minimize the injury and promise the mother that the child will outgrow it. Now it is true that in some mild cases where the injury to the nerve fibres is mild, the outlook for a complete recovery is good, but in the vast majority of instances the tendency to spontaneous recovery is very slight. In the more severe cases, where the injury to the nerve fibres was considerable, the subsequent scar tissue formation caused even extension of the paralysis by involving uninjured nerve in the scar tissue, and in some cases surgical interference apparently accomplished a good deal of improvement. Indiscriminate rubbing by the mother or nurse does not prevent hopeless deformity, and much valuable time can be saved by starting the proper treatment early, within a few weeks after birth.

Next in importance, as indicated by the number of cases, are the so-called cerebral spastics. Of these there are sixty-three. In this number I have tried to include only those, who from the history and physical examination appear to have been caused by trauma at birth. Thus I have only taken those who gave a history either of an excessively prolonged labor or of instrumental delivery, and excluded those that may have been due to intrauterine causes from developmental defects or those acquired after birth from a multitude of causes such as trauma and meningitis. That there is a distinct relation between difficult or instrumental delivery to mental and physical defects that develop later was shown as early as 1861 by Little. Later, in 1885, Sarah McNutt showed that cerebral hemorrhage was the specific cause of a large number of the spastic paralysis developing soon after birth. Post-mortem examination in some of those cases showed distinct evidence of old hemorrhages with scar tissue formation.

Every possible variation, from a slight monoplegia with a little weakness of one extremity to a diplegia with extensive involvement of all four extremities could be seen among those unfortunates. Associated with the paralysis there was also every grade of mental impairment from slight mental backwardness to complete idiocy. The end results apparently depended upon the amount of injury to the brain as well as to the part of the brain involved.

A small hemorrhage in the motor area in the fissure of Rolando manifested itself by signs of spastic paralysis in the extremities while a much more profuse hemorrhage in a silent area hardly gave any evidence of its presence, except that the child seemed rather late in sitting up and walking. In some cases, no doubt, where the absorption was complete, there were no permanent after effects at all, and then the child is said to have "outgrown" it. The mental condition similarly varied according to the area involved. Extensive involvement of the frontal lobes gave marked signs of mental retardation, while a hemorrhage limited to the fissure of Rolando gave extensive spastic paralysis without any impairment of the mentality.

These unfortunates, large as their number is, represent, however, only a small part of all the cases of cerebral hemorrhage occurring in the new-born, as a result of trauma at birth. In addition to the large number of cases where this condition is not recognized because of the mildness of the symptoms, there is a still larger number of cases of cerebral hemorrhage of the new-born, and I believe that they constitute by far the vast majority, where the bleeding is of such magnitude as to result either in still births or in death in the first 24 or 48 hours. The relation of cerebral hemorrhage to still birth has been studied by various authors with various conclusions. Parrot in a series of thirty-four consecutive autopsies on still births gives the percentage of cerebral hemorrhage as high as 76%; Warwick gives 50% on a series of thirty-six cases; Beneke, on one hundred cases as 14%; and Wehe on a series of nine hundred and fifty cases as 13%. When we remember that about 4% to 5% of all births are still births we can realize how frequent cerebral hemorrhage occurs even if we should accept it to be the cause in only 13% of all cases.

It is true, of course, that not all cases of cerebral hemorrhage are due directly to trauma at labor. There are a great number of cases developing insidiously and not until several days after birth, causing symptoms of intracranial pressure, convulsions and death. Post-mortem examination will then show no demonstrable source of hemorrhage such as torn veins or injury to the sinuses; but in addition to the hemorrhage of the brain will also be found multiple bleedings throughout the body in localities where injury at birth could hardly have been the cause, in such places as the pericardium, peritoneum, and bronchial tubes. The etiology of these cases is undoubtedly, as Rodda[3] has demonstrated, a general hemorrhagic tendency with a delayed coagulation time and prolonged bleeding time. Comparatively mild trauma of normal labor may then be sufficient in itself to set up a massive hemorrhage large enough to cause death. In these cases trauma in labor often serves as the exciting cause, though the trauma need not be so great. The fact, however, remains that trauma at birth is a very important factor in the starting of the hemorrhage in a large number of cases.

The diagnosis in these cases is not very difficult. When an infant in the first few days of life becomes listless, pale, refuses the breast, and shows a slight facial oedema, we can suspect a probable cerebral hemorrhage. The onset of convulsions and nystagmus and bulging fontanels makes the diagnosis almost certain. To further establish the diagnosis a lumbar puncture is of considerable aid. If the hemorrhage is subtentorial and along the base or intraventricular the fluid will be bloody and thoroughly mixed with the spinal fluid. If the hemorrhage is confined to the convexity and is all above the tentorium the spinal fluid will be clear and then aspiration of the subdural space through a fontanel or a suture is of great importance, both as a means of diagnosis as well as a therapeutic measure. Differentiation from acute spinal affections is as a rule not hard if we study the distribution of the paralysis.

Here again it is very important to start treatment early. Muscle training and early treatment to prevent contractures will save a good deal of time and suffering. A promise that the child will outgrow it if given time is only too readily accepted by the parent and ought not to be given unless one is absolutely sure of his grounds.

Feeble-mindedness, with or without epilepsy, forms another large but rather indefinite group of cases who owe their orign to trauma at labor. Excluding all mentally retarded children who belong to distinct types, such as Mongolian idiocy, cretinism, and amaurotic family idiocy, and all unclassified cases without any apparent etiology, I have found sixty unfortunates who can trace their origin to birth trauma. They all gave a history of either difficult labor or the use of forceps; and physical examination showed some remains of spastic paralysis in one or more extremities. I say these unfortunates form rather an indefinite group because we cannot always exclude many prenatal causes and we can never say definitely whether any given case would not have been feeble-minded even in a normal delivery. Porter states that approximately 16% of all inmates of institutions for feeble-minded gives a history of a difficult labor.

A few miscellaneous cases complete my series. One is a case of musculo spiral paralysis following a fracture of the humerus. There was complete wrist drop, exactly as we see in so-called Saturday night paralysis of the pre-prohibition days. The trouble was caused by the involvement of the musculo spiral nerve in the callus,—as there was good motion in the wrist immediately after the fracture and the paralysis did not appear until the fragments formed a solid union.

Another is a case of facial paralysis. This was caused my the compression of the peripheral portion of the facial nerve by the blade of the forceps. In a proper application of forceps the blades, as I understand it, should not be in the vicinity of the facial nerve, but accidents do happen and the blades slip occasionally, even when the application is perfect at first. Sometimes there is facial paralysis, not from actual pressure of the forceps, but from compression of an extra vasation of blood in the region of the parotid. The reason for not seeing this condition more often in the clinic is not because of the rarity of the accident, but rather because the vast majority get well too quickly and before the mother gets ready to bring the child to the hospital the paralysis is all gone.

Still another very interesting case was one of complete flaccid paralysis of both lower extremities. Paralysis of the lower limbs due to obstetrical manipulation is very rare and a detailed report of this case will be of interest. As the lumbar and sacral plexuses are so well protected at every point of emergence from the spine and in their course through the gluteal and pelvic regions that they are not disturbed by any amount of manipulation or traction of the legs, the report of this case in detail may be interesting.

This was an infant six weeks of age. Family History—No miscarriages, no history of syphilis. Foetal movements were felt at six months and were rather vigorous immediately before birth. The delivery was done by the Braxon and Hicks manoeuvre because it was found that there was a placenta previa, and everything was well except that the nurse discovered that the child did not move the lower extremities.

Physical examination showed a well-developed and normal infant except for the lower extremities. There was complete flaccid paralysis of both lower extremities with loss of all the reflexes. The sphincter ani was relaxed and there was a complete loss of sensation, as high as the level of the umbilicus. In other words, there was paralysis corresponding to a lesion of the spinal cord at the level of the tenth dorsal vertebra. Upper extremitie were perfectly normal; no paralysis or weakness of any sort. No facial paralysis, fontanels not bulging, pupils equal and reacted normally to light and distance. X-ray examination of vertebra was negative.

The lesion here was, to my opinion, undoubtedly done by a tearing of the spinal cord at about the level of the tenth dorsal vertebra caused by a dislocation of the vertebra and the slipping of one vertebra over the other. Just what part of the manoeuvre caused the dislocation of the vertebra I am not ready to say. Whether it is the extreme force of the pulling or the process of doing the version I do not know. The x-ray examination was negative, because the vertebra slipped back in place after the damage was done.

A similar case was reported by F. H. Kooy in the *Journal of Nervous and Mental Diseases.* The child was born by version and extraction. At the age of two the child's legs were spastic and paretic but could be moved weakly. The reflexes were exaggerated, pain sense was diminished and thermal sense was lost. At the age of seven the legs were completely paralyzed, knee-jerks were diminished, and there was incontinence of feces and urine. The patient died at the age of eight and a half years from pyemia. At the post-mortem it was found that the cord was almost completely ruptured at the level of the ninth and tenth thoracic segments. We have had as yet no post-mortem examination in this case; but if we did, I believe we would find a similiar condition.

In summarizing, I just want to call your attention to the fact that in a series of 2000 consecutive neurological cases there were 101 cases of obstetrical paralysis whose cause we know to be trauma in labor and 63 cases of spastic paralysis, 60 cases of feeble-mindedness, and 24 miscellaneous, who in all probability owe their origin to birth injury. In other words, there were 266 cases in all, approximately 13%, where birth injury was the direct cause of the trouble. This number I believe to be rather a conservative estimate for if we include any of the doubtful cases we should have a much larger percentage. How many of these cases could have been prevented by more efficient obstetrics and more frequent resort to Caesarean section I am not ready to say.

Since most of the cases gave a history of unduly prolonged labor followed by the use of forceps it is impossible to say just what caused most of the damage,—the too prolonged pressure of the foetal head against the maternal soft parts, or the direct trauma of the forceps. Careful and wise interference is very likely the wisest course in the vast majority of cases, but let us remember that just a little extra pull or turn may add another hopeless cripple or idiot to the community, and let us remember, furthermore, that when there is damage done, not to add insult to injury by minimizing its effects but rather warn the parents and advise them to institute treatment immediately, before undesirable complications have set in.

REFERENCES.

[1] Boston Medical and Surgical Journal, Vol. clxxiv, p. 327.
Amer. Jour. of Med. Sci., July, 1907.

GOITRE—WITH AN ANALYSIS OF ONE HUNDRED OPERATED CASES.*

By A. M. Rowley, M.D., Hartford, Conn.

Of the glands that compose the endocrin system the thyroid, today, is perhaps the best understood, and working in harmony with the other ductless organs functionates efficiently to control the metabolism of the body, but when perverted in its action, causes a train of symptoms that has been studied by observers for nearly a century and one half.

William S. Halsted, in the Johns Hopkins Hospital report of 1920, has written a most exhaustive article upon the historical observations of goitre from the earliest writers down to the present day, including such surgeons as Hedenus, who, in 1821, successfully operated six goitres. Thence tracing the progress, by the observations and works of Victor Von Bruns, Theodorus Billroth, Von Mikulicz, Von Eiselsberg and through the time of Theodor Kocher, who did so much in the standardization of the operation upon the strumous gland, ending his paper with a description of the Halsted operation, which is, and will remain, a classical procedure of sub-total bilobectomy.

Goitre is not a common phenomena along the Atlantic Seaboard, which accounts for the relative rareness of cases treated by the Eastern physicians.

In the series of one hundred operated cases which I report for analysis, I found but one instance in which goitre in a child was correspondent to one in the parent; thus heredity in this locality seems to play a minor role in its production.

Many observers of today are explaining its etiology by association with some autogenous focal infection, but in this series I was unable to find any such correlation, although in several instances the association was present, and this particularly in the younger subjects. In several cases, tonsillectomies and other operative procedures were performed to rid the patient of any local infection without improvement, either in the size or symptoms resulting from an over-active thyroid.

There was no correlation between occupation and goitre, but this was apparent between sex and goitre; there being ninety-one females to nine males. The evidence of the intimate association of the thyroid gland with the reproductive organs of the female was very striking. It is not infrequent for hypertrophy of the gland at puberty, which produces the so-called goitre of adolescence, also the hypertrophy occasioned by pregnancy, when once begun, not to cease and the subsequent atrophy not to take place, leaving the gland abnormally large or over-active. In this series of cases, fourteen followed excessive hypertrophy at adolescence and eight at pregnancy; thus in these cases it is fair to presume, that the exciting cause of the over activity of the gland was due to some temporary change in the function of the reproductive organs, either in the ovaries or uterus, which must be considered as belonging to the endocrin system. What the association may be between these organs has not been, as I know, propounded, but it is evidently the call of one system upon the other to help keep the endocrin balance, and, as often happens, over stimulation leads to perversion and the result is an over active gland.

Five cases had lived for a considerable length of time in well known goitre districts. No etiology could be found in the remaining number.

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*Read before the New England Surgical Society, October 7, 1920.

The youngest of this series operated was a child of twelve and one-half. The oldest was sixty-six years of age. There were twenty in the teens, thirty-nine in the twenties, twenty-one in the thirties, fourteen in the forties, five in the fifties, and one in the sixties. The patient of twelve and one-half years was a Hebrew child. Her mother said, she had had a goitre since she was nine, that it was growing, and for the last year she had become quite nervous. The pathological report showed the gland to be of the parenchematous hyper-plastic type.

The oldest patient of sixty-six had an adenomatous toxic type. The average length of time for developing goitre was three years and nine months. The longest was twenty years. This gland was unilaterally enlarged from a large cyst. The shortest time was three months and of the exophthalmic type.

The varieties of goitre were forty-seven non-toxic and fifty-three toxic, eighteen being exophthalmic and thirty-five adenomatous. No tuberculous or carcinomatous goitres were met with in this series.

Seven goitres of the sub-sternal variety were found, all of them being associated with the enlargement of either one or the other lateral cervical lobes. Hoarseness, resulting from a partial paresis of either one or the other vocal cords, was present in only four per cent. of these cases, this percentage being relatively smaller than that reported from many of the larger clinics.

The various symptoms of the toxic patients were those referable to the eye, exophthalmos occurring in one-third of the cases, generally associated with the usual accompanying signs, Stellwag's, Von Graefe's, and others. Aschner's phenomenon, which is to me the most interesting of all, and consists of slowing of the pulse rate by pressure on the eyeballs, was observed in ten per cent. of the cases, gentle pressure immediately reducing the pulse rate from fifteen to twenty beats per minute. This symptom is accounted for by the hypertonicity of the sympathetic nerves acting through the vagus. It has been my observation that it can be elicited only when the patient is in an excitable condition, at which time the pulse rate is higher than the patient generally carries, and I have not been able to obtain it after a few days' rest in bed or after the administration of one of the sedatives. The local signs were hypertrophy in all cases, in some, however, quite slight. The nervous symptoms were mental, shown by irritability. Those referable to the sympathetic system, such as tremor and vasamotor disturbances of the skin, as flushing and hot flashing, and the vagal, tachycardia with palpitation during excitement or exercise and stomatic flatulency; secondary heart and kidney lesions were present in several of the long-standing toxemias. Loss of weight, due to increased metabolism was a constant symptom. Recently, attempts have been made to register the basal metabolism of toxemias. There is no question that when properly and carefully done, it is a refined method, and an almost exact one, of determining the status of the patient as regards his toxemia, also in questionable cases to differentiate the toxic type of thyroid from the focal infections. It should correspond, however, very closely to the clinical inventory when carefully taken.

Excitement and exercise are the two factors most prominent in producing rapid stimulation of the gland and it has been my observation that frequently, in cases where hyperthyroidism is not suspected, the pulse rate during the administration of ether shows a poor thyroid balance.

The treatment of this series of cases was ultimately operative. Medical treatment of the toxic variety should be preparatory to surgery. To condemn a young individual who has all the ambitions and desires of youth to forego most of the pleasures she should enjoy at her age, to lead a life of quietude, avoiding excitement and exercise and be under the care of an internist who constantly prescribes one of the many sedatives, is unjustifiable, when surgical interference in the early stage of the disease is a safe and curative treatment. Too much stress, however, cannot be laid on the pre-operative treatment and care of the toxic patients. Avoidance of excitement, and rest, that completely in a prone position, and at times quite prolonged, is very necessary, together with the use of sedatives, such as the bromides or small doses of luminol, which acts so charmingly with many patients. This is of great importance if the operative mortality is to be kept low; also much attention in the long standing toxic cases must be given to the improvement of the condition of the heart and kidneys, and only when the metabolic curve is at its lowest point should an operation be considered.

We have been liberal in the pre-operative use of morphine and atropin. A hypodermic is usually given immediately following the morning pre-operative enema, at which time the patient generally suspects that she is to be operated, especially so, if her breakfast has been omitted. A second hypodermic is generally given preceding her entrance to the operating room. In cases of bad heart lesions, either a severe valve leakage or myocarditis, with a high pulse rate, a post-operative auricular fibrillation may occur, as happened in two of our operative cases; here the preliminary treatment by one or two dram doses of a standard tincture of digitalis is of great importance.

My experience with the use of radium and the x-ray is limited. Some roentgenologists are reporting favorable results from exposure of the toxic cases as checked up by the caloric test. It is hoped that further experimentation will be carried on and that good results will follow. There is danger, in exposure to the rays, of producing a fibrosis or peri-capsular adhesions, which may handicap the operator if too long time elapses between the treatment and operation. It is a tendency of the surgeon to put too much burden upon the roentgenologist. Surgeons and physicians try radium generally as the last resort in terminal cases, and it is a wonder that it still has such a good repute. If it is found efficacious in lessening the toxemia in the very severe cases, it will be of great aid in the preoperative treatment.

In this series, fifteen were ligated and subsequently had the more serious operation. All but one of these cases were ligated under novocaine, the other under ether. The average length of time between ligation and lobectomy was eight months plus. A very high overage, because of two waiting twenty-two and twenty-three months, respectively, during my absence from private practice. Leaving these two out, the average was four months. In all cases, bipolar ligation was done.

In the operation of lobectomy, as in many others, the question arises, what type of anaesthetic is the best to employ. I believe it is a controversy that will not be easily settled, but it is safe to say that novocaine, associated with morphine, when used in the hands of skillful operators, who have the entire confidence of their patients, is the safest. Ligation nearly always can be done under its influence, and much of the operation, and in some cases the entire operation, of bilobectomy. Generally, in the removal of the gland, the local anaesthetic has to be augmented, either with gas or with ether. The operative technique followed in this series was practically that used by Halsted, with the exception that, with a goitre of any considerable size, the muscles covering the gland were cut. This certainly makes for ease and rapidity at operation, and I have never seen any bad results follow their severance. Metal skin clips allow one to get a closer approximation of the skin edges, following a sub-cuticular platysma suture, than any other method of closure. The clips may be removed on the second day, and the result is a fine linear scar.

The amount of gland tissue removed must depend on its size and the degree of toxemia present. Just how much should be removed must, of necessity, be left to the judgment of the individual operator in each case.

In this series, one toxic case had a recurrence of symptoms and hypertrophy of the remaining tissue. In another, too much gland was removed and there was a thyroid privation. Small doses of thyroid have been administered to her over a period of two years and under its use she is perfectly well. The other case was re-operated and is now well.

It has been our custom to use rubber tissue drainage for the first twenty-four hours. Many of the cases have developed serum in the wound which had to be evacuated for a few days. In the sub-sternal type, prolonged drainage interferes with the healing of the cavity which must be by blood clot. In no case have we had a pyogenic infection of the wound.

The immediate post-operative treatment consisted in filling the circulation with fluids, encouraging the intake of water, especially if there was a post-operative toxemia. In our group, morphine and atropin were given for the first thirty-six hours; morphine lessens the desire to cough and, with atropin, tends to keep the laryngeal mucosa dry.

Post-operative complications have been, in two cases, pneumonia, one of an abortive type, the other of the true lobar eight-day type. It is of the utmost importance to exclude, in goitre cases, an acute nasal or upper respiratory infection before operating, because of this post-operative danger. Aphonia was observed in two cases, in one persisting for four months, the other clearing early. Two of our cases suffered from mild tetany, calcium was administered and both cleared.

The post-operative result was a morbidity of ten days, that being the average stay in the hospital, and from one to two months of rest in toxic cases, before they resume their vocation. The mortality was one per cent., or one case died in the series reported.

The operative results, in the toxic cases, were marked lowering of the pulse rate within two weeks following lobectomy, gradual increase of weight, and lessening of the exophthalmos and eye symptoms, the maximum benefit occurring at the end of one year. In only two cases of goitre in the last three years, were the symptoms of toxemia so advanced that no operative procedure for relief could be attempted. A small percentage of cases will have a recurrence of symptoms, because the surgeon under estimates the amount of gland to be removed, or the blood supply is not sufficiently shut off from the remaining tissue. These cases may be re-operated with safety, and they will be fewer and fewer, as the surgeon improves his technique, gains in experience at the operating table and in watching his operative results.

ON THE SEVERELY BUT NOT TOTALLY DISABLED IN INDUSTRY, WITH SPECIAL REFERENCE TO THE ONE-ARMED.*

By Leo Eloesser, M.D., San Francisco, Calif.,
Associate Clinical Professor of Surgery, Stanford University.

An artisan or manual laborer who has suffered the loss of an arm is a type of the workman severely, but not totally disabled. The difficulties that arise in adjudicating his compensation apply to almost all severely but not totally incapacitated insurance carriers. The diminution of his wage-earning capacity will vary greatly, according to his occupation; its impairment will be in inverse ratio to his intelligence and energy.

A man whose calling requires no manual exertion or dexterity: a merchant, accountant, or lawyer, will not earn less because he has lost an arm. The more a man has to depend on the work of his two hands, rather than on his brain, for getting a living, the greater will be his loss.

Here we encounter the greatest difficulty in proper adjustment of compensation. To compensate a stock and bond salesman for the loss of an arm, when his injury diminishes his earning capacity not at all, is manifestly an economic injustice. It would be still more unfair to compensate an injured section hand, dependent entirely upon the use of his two arms, but earning a low wage, with a smaller sum than a high-salaried salesman, whose wage-earning capacity is unimpaired. This injustice is inherent to a system whereby the rate of compensation is based upon the wage alone, without taking into account the relation between the injured man's occupation and his injury.

The section hand who loses an arm is entirely incapacitated for manual labor. His intelligence is probably low; if it were not, he would not be a section hand. It is therefore unlikely that he will be able to shift to some other occupation calling for a higher order of intelligence. The only other courses left him are: to do nothing; to make a living as an object of semi-charity by selling papers or pencils; or to find a position as a watchman, a janitor, a messenger or a small shop-keeper, where his assets will be reliability and honesty. The salesman can continue to sell bonds at the same salary as before his injury.

The principles underlying the difference in compensation between the salesman and the section hand are inherent to our whole social system, where a man is penalized by poverty for defects of intellect he is born with, through no fault of his own. That we can change this seems unlikely. It is a law of the natural process of selection that the competent be rewarded and the incompetent suffer. Modern attempts to subvert this system by equalizing competency and shiftlessness seem mistaken efforts. It appears unjust, however, that a man who, through no fault of his own, cannot change his occupation to a self-sustaining one after his injury, should suffer financially to a much greater degree than the man whose intelligence will permit him to shift from one occupation to another with but little loss.

Two elements should enter into the rating of the injured: first, the nature of the injury; and second, the relation of the injury to the man's previous occupation and education.

It is evident that the permanent rating of each injury for each class of labor must be made on the injury rather than on the subsequent adaption of the injured to the new conditions imposed upon them by their infimities. Thus a farm hand with an amputation of the forearm should be rated at so and so many per cent.; a watchmaker with a permanent ulnar palsy at so and so many per cent., regardless of what their subsequent careers may be. Whether the farm hand learns banking and earns $50,000 a year, or whether the watchmaker turns vagabond and earns nothing at all, should make no difference in their rating. Derating the farm hand because he has had the energy to rise out of his former sphere, or increaing the pension of the watchmaker because of his laziness and shiftlessness, would be manifestly unwise. It would penalize the energy of the one and reward the incompetency of the other.

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* Read before the forty-ninth annual meeting of the Medical Society, State of California, Santa Barbara, May, 1920.

The pamphlet issued by the War Risk Insurance Bureau contains the following clause: "Increase or decrease in earnings of the ex-service men does *not* affect any compensation payments he may be receiving as long as the prior rated physical impairment continues." All accident commissions work on the same basis and rate their insured on the physical impairment due to injury.

The War Risk Bureau, does not recognize a second factor: the relation of the disability to the man's previous occupation and training. A man with a leg amputation is rated at 50%, whether he be a telegrapher, a mail clerk or a bank president.

A fair method of rating should specifically recognize this second factor and be based both upon the anatomical injury and the man's previous occupation. The table of disabilities should include in a vertical column a list of the more important injuries, in a horizontal line the more important occupations. In the resulting squares should be entered the percentage of disability for each injury and each occupation. A tabulation made according to this scheme is used by the California State Accident Commission.

The amputated falling under compensation acts may be divided roughly into four occupational classes:

1. The unskilled laborer.
2. The more or less skilled artisan.
3. The farmer and the highly specialized artisan.
4. Those whose occupations depend on brain work alone.

The problem of how to fit the maimed for the future, whether or not they should change their pursuits, and in what pursuits they should engage after injury, is one to which Army authorities have given much attention, in spite of the fact that the Army rating takes cognizance only of the injury and not of the occpation of the injured.

An amputated of the first class, an unskilled *laborer,* who depends solely upon manual strength for his living, will, of necessity, be barred from following his former occupation, no matter with what artificial appliance he may be fitted. Two courses are open to him: he may fit himself for a new pursuit in which he can dispense with the use of one hand, *i.e.,* one requiring the use of considerably more intelligence than in his old; or he may seek employment as a janitor, porter or watchman.

Whether to train the man for a new vocation will depend upon his native intelligence. It may be that lack of educational opportunity rather than an inborn stupidity, has forced him to stay in the ranks of unskilled labor. Opportunities for training should, therefor, be offered to all injured. Whether or not they be allowed to keep on with this training, however, should depend upon regular reports rendered by their instructors. The institutions to which they are sent should be public schools or state institutions, that there may be no financial temptation on the part of the school to keep up the training of worthless material. It it be evident, after a fair trial of vocational training, that a man is unfitted for the career for which he is being educated, training should be stopped.

A third course should be open to unskilled laborers: they should have the choice of land instead of money, under conditions specified later. A one-armed agriculturist, with or without a useful artificial arm, is in a position to maintain himself decently.

An amputated of the second class, a *skilled artisan,* will like the unskilled laborer, usually be forced into a new pursuit, not because he is totally unable to carry in his trade, but because he is unable to compete in point of time with an able-bodied worker, no matter how perfect the artificial appliance with which he is fitted.

It is common to find one-armed men who do practically everything that a two-armed man does. With practise, a one-armed man can do almost everything he has a mind to, but he can never do it as quickly as his two-armed competitor.

In most manoeuvres the artisan uses one hand as a motor, the other as a clamp, a vise, a steadier, or a guide. Thus, when driving a nail, one hand holds and guides the nail, the other wields the hammer. The one-amed man has to pick up nail and hammer together, and start the nail by holding the hammer in his fist and the nail between two fingers of the same hand. Once the nail has entered the wood and is steady, he shifts his hold on the hammer, grasps the handle and drives the nail home. The two-handed man starts the nail and drives it home without interruption, while the one handed man divides this act into two separate processes. The one-handed man will drive the nail just as well, but he will take at least twice as long, probably longer.

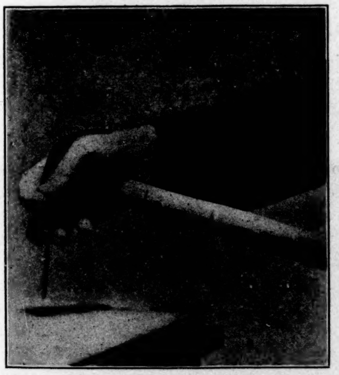

FIG. 1.—One-handed man's manner of driving a nail. Starting the nail.

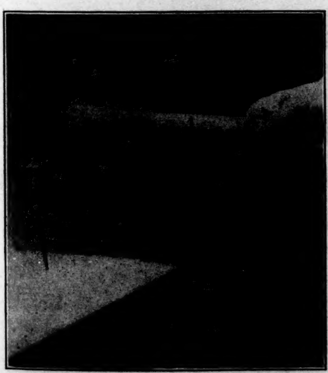

FIG. 2.—One-handed man's manner of driving a nail. Driving the nail.

Suppose he wears an appliance. Can he not guide the nail with the appliance? Yes; not as securely or readily as he can with his hand, but better than with no appliance at all. Granted that he could drive the nail almost as quickly, with the help of his artificial hand, as his two-armed fellow-workman. He has to pick the nail up out of a heap or from his pocket. This he will never do with an appliance. He will use his good hand to pick up the nail. He will transfer it to the appliance, and then proceed to drive the nail. If he is shingling or laying floors, he will lay, perhaps, one-half as much as his fellow. No contractor will employ him. His slowness will hold down the others on the job.

This is the crux of the whole situation—the time element. At the present high rate of wages, and with modern efficiency, no employer can afford a slow, skilled artisan, even at a low wage. He will not keep pace with others, and his unfinished tasks will keep other men waiting. The artisan has lost his job when he has lost his arm.

He has, however, not lost his training or the whole value of his experience. If he is skilled, well-trained, and possessed of the necessary moral qualities, he will make an ideal inspector, foreman, or employer. If he has risen above his trade and can make his head supplement his hands, his injury may not curtail his earnings but may, on the contrary, spur him on to efforts in a better paid field. The most profitable turn, then, for the one-handed artisan is to make an asset of his previous experience and training and to use it in overseeing, directing,

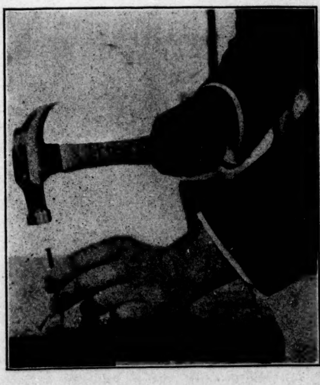

FIG. 3.—Normal manner of driving a nail.

or inspecting the work of others. He cannot go back to where he was. If he has not the intelligence and the moral qualities to combine with his training in rising above his trade, he will fall below it. He will either fill the ranks of those whose only assets are honesty and reliability—messengers, watchmen, janitors and porters, or, lacking both intelligence and reliability, he will drift into pensionage, vagabondage, laziness and, often enough, jail.

The education of the skilled artisan should recognize the value of his previous knowledge and experience: his new occupation should be built on his old one as a basis; add to it and supplement it, and not cast it aside. The workman, unless he is a mere beginner, should not be shifted by his training to an entirely new field. It is ordinarily unwise to try to make an advertising manager of an iron-worker who has lost one arm. He will do better as a supervisor, foreman, inspector, or, if he is taught accounting, as an office man in an iron works, than as a tyro in a field where his previous knowledge counts for nothing.

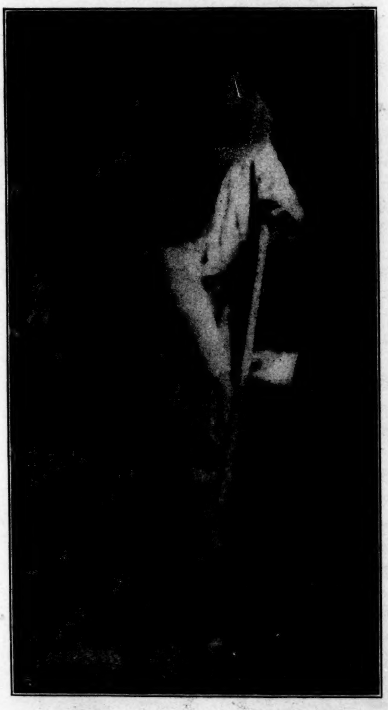

FIG. 4.—One-handed man using spade. This man has an amputation through the left forearm, and an amputation of the right thumb and forefinger. He uses no appliances and earns his living on a ranch.

These considerations apply to most artisans employed in more or less competitive production, in all large factories and enterprises where many hands are at work. Modern development of mass production has made room for one exception: more or less unskilled artisans, usually women or boys, employed strictly on one machine in turning out piece work. Such workmen are either beginners, or if older, of low intelligence. Either their stumps or the machines they tend can often be fitted with an attachment that makes it possible for them to continue their previous occupation. These human pendants to a machine, however, can scarcely be classed as skilled artisans.

Men of the third class, *farmers or highly speciaized artizians*, are skilled laborers, but their work is done under circumstances differ-

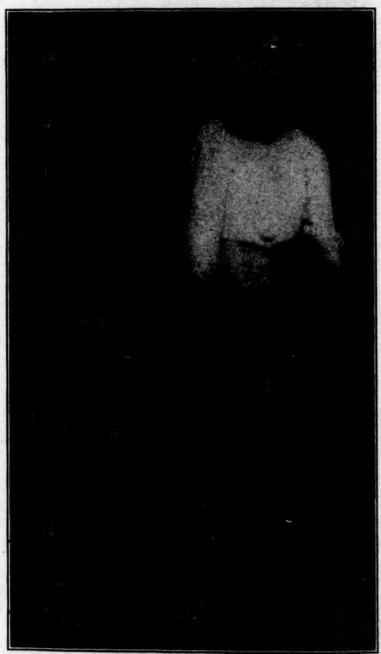

FIG. 5.—One-armed man using spade. (*Cf.* Fig. 4.)

ent to those governing a skilled workman in a large modern plant. A farmer can be almost or quite as successful with one arm as with two. He is not driven by competition in matters of piece production. If he takes longer to finish a job, no fellow-workman is kept waiting at his heels. He can dig, plow, feed stock and pick fruit, not very much more awkwardly, though more slowly, than his neighbors. The one-armed carpenter cited above may not be able to hold a job laying floors in a city skyscraper, but he can floor his farmhouse porch just as well as ever he could, even though it take 60 hours instead of 20.

Artizians in more or less highly specialized and skilled kinds of work, especially those in small shops, are not so much influenced by competition. A man who repairs dolls, or a man who sharpens microtome knives, or a skilled taxidermist, working with, permaps, one or two apprentices, will work more slowly with one arm than with two. His earning capacity will decrease: he will repair one doll, or sharpen one knife, or stuff one bird, where formerly he did two; but he will still hold his own at his old trade.

The farmer and the artizian engaged in a highly specialized and not over-crowded occupation (who works under much the same conditions as the farmer), will best remain at their old jobs. In none of them does the time element play a decisive rôle. The farmer who is fitted with a good artificial appliance can not only supervise farming operations, but he can personally carry on most of the work that need be done around the farm. The artisan who can do highly specialized work is not driven by the hurry of modern production to forsake his former calling.

A man in the fourth class, *intellectual labor*, will not require a change of employment, nor will his injury often reduce his wage-earning capacity. Compensation for such men should consist in payment of all hospital and medical expense, including proper appliances, and at this point I think compensation should cease. There is no economic reason why a one-armed salesman should be supported by the State. To offer him money is a feeble recompense for his suffering; to try to requite with money the deformity which he must carry throughout his life, is totally inadquate and unfitting. His own energy and bravery must make up for that.

The following table, furnished by the kindness of Dr. Harbaugh, of the California Industrial Accident Commission, illustrates occupations of the one-armed before and after injury. It bears out what has been said concerning the course of the various occupational classes after injury.

Total number of amputations with sufficient data	43
(*a*) Laborers[*]	
(*b*) More or less skilled artisans	33
Changed to mercantile and office work	10
Changed to watchmen, porters, etc.	3[†]
Changed to ranchers	3
Did not change trade	4[‡]
Not working	8[§]
At school	5
(*c*) Farmers and agricultural workers (No change of occupation)	5
(*d*) Brain workers (No change of occupation)	5

Proper adjustment, then, of compensation for the one-armed and for other men who are severely but not totally disabled, is made on a basis containing two factors: the injury and the man's previous employment.

Men who are enabled by their intelligence, or by the nature of their pursuit, to continue in it with but small diminution of their wage-earning capacity should receive as compensation the best of medical attention. Men who by reason of stupidity or age are unable to find a pursuit in which they can support themselves, should receive compensation sufficient for them to live after their injury at least as well as before, perhaps better. Payment of compensation (except for the aged) should be made contingent upon the injured men doing some kind of work. If, however, they *do* work and earn a wage, no matter how small, compensation should make up the difference between their earnings before and after injury.

All severely injured should have opportunity to better themselves by vocational training. Their fitness for education should be determined by reports from unbiased instructors. If their progress warrant continuing their studies, they should receive compensation quite sufficient to maintain them during preparation for their new careers.

Men having a knowledge of agriculture should be induced to accept compensation in

[*] Data insufficient as to specific nature of employment.

[†] Two foreigners.

[‡] One continued to run a threshing machine as a stationary engineer. one truck driver, one paste machine tender, one chambermaid. None of these, except the paste machine tender, worked in large factories where speed played a part; the paste machine tender was merely a human pendant to a machine, collecting macaroni on trays.

[§] Half of these were over 50 years of age.

land instead of money. The land would best be given them on a five-year lease, to become theirs at the end of that time if they prove themselves competent to till it.

Payment of compensation to all classes of labor should be made contingent upon their engaging in some profitable occupation. If need be, the State itself should furnish employment. Opposition to the employment of cripples may be expected from supporters of the minimum wage laws and from labor unions.

It is not to be expected that employers will pay a cripple of one-half to two-thirds normal earning capacity a full union wage. However, difficulties arising from minimum wage laws and union labor standards might be met if the sum of the man's earnings, plus his compensation, be made to exceed the minimum wage and to come up to the union standard.

The type of appliance for the one-armed and the advisability of furnishing an appliance at all will depend upon the man's occupation, and the nature of his stump.

The one-armed soon learn to feed themselves, wash, dress, and help themselves at home and on the street without an appliance—most of them more readily without than with one. I have not been able to find out what peculiarities of person or mind determine whether the man will will use his appliance or go without. It seems to be a quite fortuitous matter. Some men wear an appliance for a time, then go without one; some go without one for a time, then wear one; some seem to alternate, swayed in turn by glowing representations of limb-makers, and disappointment in their promises.

Cumbersome or intricate and expensive appliances are not to be recommended. If the appliance be uncomfortable or get out of order easily, if it consist of a maze of gears and wheels that work with startling snaps and clicks, the injured will not wear it. Or he may disregard the complicated movements planned by its maker and use it merely as a steadier and guide, for which a simple wooden hand covered with a glove would serve him just as well.

Men with a high humerus amputation or a shoulder exarticulation, and men with long forearm stumps, will rarely wear an arm. A short humerus stump is not long enough nor strong enough to guide an appliance properly, and a long forearm stump is too useful as it is. It has tactile sensation, an attribute that no apparatus can supplant.

The best stumps to fit with appliances are long humerus stumps. The stump is long and strong enough to be really useful in guiding an artificial arm. The elbow fold is gone, so that the arm lacks a useful means of holding and gripping objects. A suitable appliance may supplant the lost elbow fairly well.

Brain workers will rarely wear an apparatus. Apparatus are failures cosmetically. An empty sleeve is scarcely more noticeable than a wooden arm.

Artizians and farmers will have most use for an appliance.

Arms have been made with innumerable attachments for special purposes. All of them have some sort of clutch into which various tools of trade and utensils of every-day life—forks, knives, brushes, etc.,—can be inserted. The clutch is a hindrance. It is worked with the sound hand, *i.e.*, the wearer must insert the tools into the clutch and tighten it with his good hand. But he can use his remaining hand to better advantage in doing something other

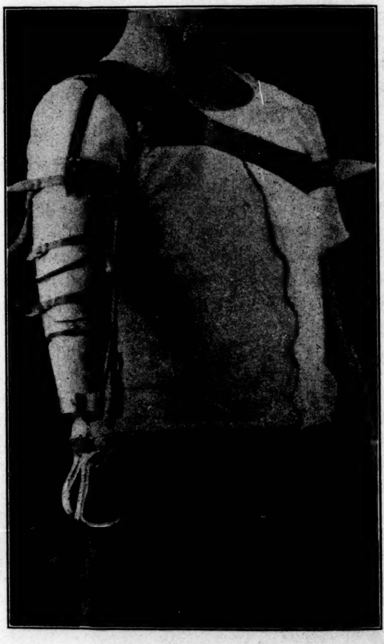

FIG. 6.—Universal hook for humerus amputations. No elbow joint. Especially adapted for heavy work.

than working his artificial arm. An appliance should be entirely controlled by the stump and shoulder, and leave the one remaining hand disengaged. Workmen doing piece work, who perform the same manoeuvre all day long and who, once they have inserted a special appliance into the clutch, could leave it there during their whole working hours without change, may be exceptions. They may find a clutch arm, with a few specialized instruments, useful. Most French and German arms work on this principle.

The most generally useful appliance is a hook or a ring. Dorrance, of San José, has invented a double hook whose jaws open at an angle of 45° so that the hook may be converted into a more or less closed ring. Objects may be grasped between the jaws of the hook and held firmly. The hook is opened by a strap leading to the opposite shoulder. It is shut by elastic bands slipped over its base. It is the most generally useful appliance that I know.

It may be of advantage (especially for farmers and artisans who need a strong arm) to make an apparatus for humerus amputations without an elbow joint, and to fit the hook directly to the end of the stump. Flexion is weak in an arm with a movable elbow; the elbow can only be held flexed against a strain by mechanically locking the joint. A mechanical lock, however, calls for control by means of the good hand. The arm can be made much stronger by doing away with the joint altogether and fastening the hook directly below the stump.

CONCLUSIONS.

1. Compensation for the severely but not totally disabled, should be made on a combined basis of: (*a*) Physical impairment due to injury; (*b*) Previous occupation.
2. All severely injured should be given opportunity for vocational training.
3. The new career should utilize and be based upon the injured man's previous knowledge and experience.
4. Whether to continue training should depend upon the man's intelligence and fitness for a new career.
5. Training should be stopped if progress does not warrant its continuance.
6. Laborers trained in agriculture should be offered inducements to accept compensation in land instead of money.
7. Compensation should be contingent upon the injured engaging in profitable occupation.
8. Suitable employment should be furnished by the State, if necessary.

THE ADMINISTRATION OF ETHER BY AN INTRAVENOUS METHOD.

BY H. QUIMBY GALLUPE, M.D., BOSTON.

IN April, 1919, by arrangement with Dr. Robert C. Cochrane of the staff of the Boston City Hospital, it was possible to administer the first intravenous ether at that hospital.

It was thought best to use the method during a short operation on a type of patient taking ether with the most difficulty. A man sixty-six years of age with marked alcoholic habits, admitted for the cure of a right inguinal hernia, was chosen for the experiment. There were no definite rules, and no person with previous experience available. The following procedure was carried out with success.

Since ether is soluble in water, seven parts in a hundred, seventy cubic centimeters of ether were dissolved in about a liter of isotonic salt solution at room temperature. An ordinary glass burette, rubber tubing and canulla were boiled and the burette set up on a stand by the operating table at the right of the patient's head. The patient was then prepared for operation, and his right arm was also scrubbed with soap, water and alcohol. He had received no previous medication and his blood pressure was 130/90, pulse 78, temperature 98.4°. The right arm was draped with towels exposing the elbow, and under local anesthesia (½% novocaine) the median basillic vein was exposed. The burette was then filled with ether—salt solution and the solution allowed to run through the apparatus. The glass cock was closed. The vein was opened, the cock released, and the canula inserted into the vein. At first the solution was run in at the rate of five cubic centimeters per minute with no effect on the patient. The rate of flow was gradually increased to ten cubic centimeters per minute, during which time the patient became jocose, and the odor of ether could be detected on his breath. While the flow was being increased to fifteen cubic centimeters per minute, and when the method seemed a failure, the patient suddenly became unconscious, his respirations deep and regular, his muscles completely relaxed, and all other reflexes vanished excepting the final control of his pupil by the central nervous system. The flow was maintained at 15 c.c. per minute. The patient was draped and the operation begun. A Lumbard airway was inserted in the patient's mouth at this time. There had been no excitement, no marked rigidity, and not a movement by the patient since early in the administration.

During the operation, which lasted about twenty minutes, the rate of flow was changed several times. Any decrease from 15 c.c. per minute caused a rapid return of reflexes; any increase from 15 c.c. per minute produced shallow respiration, a rise in pulse, and a widely dilated pupil. As soon as the skin was sutured, the flow was stopped and the incision over the vein sutured. About 1200 c.c. of the solution had been used. Dressings having been applied, the patient was returned to the ether recovery ward on the operating floor. Within ten minutes after the ether had been discontinued the man was conscious and rational, and without nausea.

CONCLUSIONS.

The method is without danger when controlled by one who understands the physiological effects of ether, and when used on a patient with a relatively low blood pressure.

The method should be of value in operations of short duration about the face and mouth, and in cases of shock where fluid given to the patient is essential.

Lack of ill effects during recovery make the method favorable from the paient's point of view. Of course, it is not necessary to expose the vein of the arm.

* * *

The National Health Council, made up of The American Public Health Association. American Social Hygiene Association, National Committee Mental Hygiene, National Organization of Public Health Nursing, National Tuberculosis Association, National Child Health Organization, American Nurses Association, League for Nursing Education, and Bureau of Social Hygiene, will occupy rooms in the New Penn Terminal Building on Seventh Avenue, New York City, with a branch office of the United States Public Health Service.

Book Reviews.

A Synopsis of Medicine. By Henry Letheby Tidy, M. A., M. D., B. Ch., F. R. C. P., New York: William Wood and Company. 1921.

"A Synopsis of Medicine" presents a very useful outline and summary of the most important principles of medicine. Diseases are classified and described, their symptoms enumerated, and their pathology explained. The book is divided into sections, dealing with specific infectious diseases, diseases due to physical agents, the intoxications, diseases of metabolism and of deficiency, and diseases of the digestive system, the respiratory system, kidney and urinary tract, the blood, the circulatory system, the dietless glands, and the nervous system, vasomotor and trophic disturbances, are considered, and also diseases of the muscles, joints and bones. Short summaries and special headings help greatly to facilitate the reading of so extensive a work. It is not intended that this book should take the place of a text-book; its purpose is to be of assistance to those who wish to review and revise their knowledge rapidly.

Scurvy Past and Present. By Alfred F. Hess, M. D., Philadelphia and London: J. B. Lippincott Company. 1920.

In view of the recent advances made in the study of scurvy and the scarcity of literature on this subject, this volume, "Scurvy Past and Present," is most opportune and welcome. In this book the author has revised the history of the disease and has presented the valuable data collected during seven years of investigation of scurvy, both in the laboratory and clinic. Various theories in regard to the etiology of scurvy are discussed. Detailed consideration is given to the pathology of the disease, its symptomatology and diagnosis, its prognosis and treatment. Valuable informtion is presented in chapters dealing with the antiscorbutic vitamine and antiscorbutic foods. Of considerable interest is the section describing aspects of experimental scurvy. Scurvy is considered in its relation to beriberi, pellagra, rickets, osteogenesis, imperfecta, osteomalaria, and other diseases. The book contains many excellent charts, diagrams plates and tables. The demand made by recent investigation of scurvy, especially as a result of experiences during the World War for a renewed consideration of this disease, has been met admirably by the publication of this excellent treatise of the subject.

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THE RELATION OF THE EXPERT IN INTERNAL MEDICINE TO THE GENERAL PRACTITIONER.

"WHAT is going to happen to the General Practitioner? Is he going to disappear from the world entirely?" These questions are continually being raised by thoughtful laymen who find themselves bewildered by a world of medical specialism and do not know where to look for help. "Must we always go to specialists," they ask, "why can't we have the general practitioner who used to know how to take care of us when we were sick?" Of course, the answer is that they ought to consult the general practitioner. He is available and he always will be available, because he constitutes the one essential factor in the profession. The relatively prominent position occupied by the specialists today is due to their being a new development, and like all new developments, they monopolize a good deal of public attention. Meanwhile, however, the general practice of medicine goes on, improving gradually from year to year. Far from being rendered less important and by the creation of increasing numbers of special branches, the rôle of the general practitioner becomes, if anything, more important, for he must always be the medium of preserving a sound balance between them all. The real problem is thus, not what is to happen to the general practitioner in a world of specialists, but what is the position of the specialist in a world which centers round the general practitioner. The value of the specialist depends in the last analysis on what he can contribute to promote the efficiency of general medical practice.

From this point of view it is of interest to consider the relation of the expert in internal medicine to the general practitioner. Here is the field which lies closest to general practice and the one in which the general practitioner is usually most at home. Can he be substantially aided by the expert in this field and especially by the kind of expert that is now being produced? The type is changing.

A generation ago the clinician who was prominent in the field of purely medical disease achieved his standing only after many years of active general practice and hospital service. His position was based on an unusually broad clinical experience in which the opportunity for contact with a great variety of diseases offered in the wards of large hospitals often played an important part. He became an expert by virtue of the matured judgment which is developed by prolonged experience. He had followed the course of diseases from their inception to their termination and he had first-hand knowledge of prognosis and the effects of treatment. One could go to him with any unusual or obscure condition and he could always cite another similar case that he had seen years ago and had preserved in the vast storehouse of his memory. He had the foundations of the general practitioner, but had builded on them broadly and extensively. The expert in internal medicine at the present day, on the other hand, is tending to be of a different type. There is gradually arising a considerable group of men who aim from the outset of their career to become unusually proficient in one or more of the subdivisions of internal medicine and who enter the field as experts or consultants comparatively early in life. Their training has been intensive rather than extensive and has usually consisted of five to ten years devoted to intimate contact with disease in hospitals, to study of the fundamental sciences that bear on clinical medicine, and to scientific research. Prolonged residence in large hospitals has given them much clinical experience, but it is usually of a different kind from that of the general practitioner or the medical consultant of a generation ago. Their experience embraces a narrow field, but the field has been cultivated more deeply and they have brought to it all the enlightening contributions of modern science. This limitation of fields within the range of internal medicine itself has produced new specialties and we now have experts particularly skilled in infectious diseases, in heart disease, in renal, in pulmonary or gastrointestinal conditions. No one can master the details of the newer knowledge in all of the subjects or hope to keep pace with the rapidly advancing progress. The expert in a limited field within the bounds of internal medicine is a natural product of medical development. He is also, indeed, a product much to be desired, for on him depends largely the further advance of our knowledge. The question is, in what way can his specialized information be of use to the general practitioner.

The expert in internal medicine, can be of assistance to the general practitioner both in the diagnosis and treatment of disease. What he can offer of value in diagnosis depends in part on concentrated experience with limited groups of cases, and in part on his understanding of the use and interpretation of modern laboratory methods. The correlation of physics, chemistry, physiology, and biology, with medicine have produced many complicated but highly accurate diagnostic measures, the use of which involves so much time, experience, and financial outlay that they can never be adopted by the general practitioner. These methods are, indeed, often applicable to so small a group of patients that it would be economically wrong to attempt to make them a part of the armamentarium of the general physician. They must always be in the hands of men who are devoting themselves to the study of limited types of cases. The practical value in the care of patients, however, of the more accurate diagnosis afforded by such measures as electrocardiography, the determination of the basal metabolism, the chemical analysis of the blood, or the establishment of the type of infecting microörganism in infections of the respiratory tract, is undoubted. The expert in internal medicine, not only knows how to apply these tests, but he also knows which of the rapidly accumulating and often much heralded new tests are worth while applying in any given instance. He should serve as a clearing house for the general practitioner, telling him in what direction a case should be investigated and what particular measures are likely to throw light on the diagnostic problem. Good medicine does not consist in performing every diagnostic test, but in the proper selection of those which wise judgment indicates may be of value. In a similar manner, the expert in internal medicine may aid the general practitioner in problems of treatment. There are many therapeutic measures that have only a highly specific application. Experience in their use, and an understanding of where to use them can often be obtained by the man whose work is concentrated along certain lines and who sees a larger number of cases of some particular condition than falls to the lot of the general practitioner. Again, the critical judgment of the expert, based on his clinical experience and on his knowledge of underlying principles, enables him to differentiate between all the new therapeutic suggestions which are constantly being urged on the practitioner and to select those which logically and reasonably give promise of value. In diagnosis and treatment, the expert in internal medicine must act as the advance guard of the general practitioner, serving on the frontier between clinical medicine and the fundamental sciences, striving always to correlate the two, and to bring to the general practitioner the best fruits of his labors.

THE MISSOURI BILL FOR THE REGISTRATION OF NURSES.

Miss **Helen Wood**, formerly of the Massachusetts General Hospital and the Massachusetts Board of Registration of Nurses, has forwarded the bill enacted into law in Missouri which she reports as the best law in the United States.

The important features of the law are:

Each member of the Board must be a registered nurse, a graduate of a school of nursing and have been a teacher in a school of nursing for at least one year.

A system of inspection of all schools of nursing and schools or classes for attendants, must be carried out.

Must appoint as secretary to the Board a registered nurse, who shall also be educational director and chief examiner, with salary to be determined by the board.

Members of the board shall be paid $10 per day for work done.

Two general classifications for nurses is arranged for. The graduate trained nurse with authority to use the title Registered Nurse, and four grades of nurses who are not graduates of training schools under the title of "licensed attendant."

Every registered nurse or licensed attendant shall also register with the county clerk.

Every registered nurse or licensed attendant must re-register every year—fee, $1.00.

The usual waivers are extended to those now registered and the full educational requirements of trained nurses do not go into effect until 1928, being graduated up to that time.

Exemption: Gratuitous nursing or care of the sick by friend or member of the family or nursing when done in connection with the practice of religious belief, or attendants in eleemosynary institutions of the state or of cities having a population of 30,000 inhabitants or more, and also exemption in event of a public emergency so pronounced by the state board of health. With these exceptions no one may practise as a trained nurse or licensed attendant in Missouri.

The board may grant provisional licenses to practise for a period not exceeding six months —fee, $5.00.

This is the most far reaching compulsory nursing law ever enacted. In Massachusetts, attempts have been made to establish some of the features of this law, but there has been opposition to all compulsory measures, and representatives of the training schools connected with the institutions for the insane, objected to the registration of attendants. The legislature evidently felt that in the presence of this opposition, it was wise not to adopt any of the bills presented.

Missouri has broken away from medical representation on the board of registration for nurses. This will bring up the question whether or not physicians are to relinquish all influence on questions relating to the curricula of training schools for nurses. While it is fully recognized that nursing has developed into a profession, there is room to question whether physicians may not have functions relating to the education of nurses. There is a growing suspicion on the part of some physicians that the work of some nurses is encroaching to an appreciable degree upon the legitimate work of the doctor, and hence it may be wise to retain the most cordial coöperation between these allied professions.

* * *

"TWO BOTTLES A DAY TOO MUCH"

UNDER the above title, Mr. Volstead attempts to make the doctor a buffer between the opposing forces of prohibition and the opponents thereof, with the implication that if the present requirements do not work out well more stringent regulations may be imposed.

The whole prohibition scheme has placed such onerous burdens on doctors that they are quite generally disgusted with the law, and many absolutely refuse to take out licenses to prescribe alcoholic liquors. As in many attempts at legislation, the doctor is subjected to humiliating restrictions. A far simpler and less expensive requirement would have been to confer upon registered physicians the authority to prescribe as might be required, the government reserving the right to revoke permits whenever it could be shown that the intent of the law was not being complied with. At the present time, sixty-three per cent. of registered physicians have taken out licenses to prescribe alcoholic liquors.

It is claimed that amendments to the Volstead law are to be presented which will extend restriction further.

* * *

MEDICAL NOTES.

THE PUBLIC HEALTH SERVICE, WASHINGTON, D. C., proposes to conduct a general public health institute to take place during the fall of 1921; and to offer 25 to 30 courses, including the following: diagnosis and treatment of tuberculosis; nutrition in health and disease; sanitary engineering; clinic nursing and social work; clinic management; courses in syphilis and gonorrhea; mental hygiene; industrial hygiene; child hygiene; vital statistics; laboratory diagnosis; health centers; various courses in psychology and sociology.

The Institute faculty will be composed of 75 to 100 leading authorities, including William H. Welch, William H. Park, John A. Fordyce, Valeria H. Parker, John H. Stokes, Michael M. Davis, Jr., William H. White, Anna Garlin Spencer, Irving Fisher, C. V. Chapin, M. H. Rosenau.

THE NATIONAL ANESTHESIA RESEARCH SOCIETY held a special meeting at Columbus, Ohio, April 22, 1921. E. T. McKuson, of Toledo, was elected President and F. T. Franklinberg, 16 East Broad Street, Columbus, Ohio, Secretary. The Society publishes bulletins of interest to practitioners. Dr. Henry Edmund Gaston Boyle, O.B.E., representing the Royal Society of Medicine, London, and lecturer on Anesthetics to St. Bartholomew's Hospital, will attend the meeting May 31, at Niagara Falls.

HONORARY FELLOWSHIPS will be conferred on Drs. W. J. and C. H. Mayo, George Emerson Brewer, George W. Crile, Richard H. Harte, W. W. Keene, John M. T. Finney and A. J. Ochsner, by the Council of the Royal College of Surgeons of Ireland under a resolution adopted April 26, 1921. The ceremony will take place in the autumn.

WHITNEY DRUG CONTROL ACT.—New York has found the ambulatory treatment of the drug addict to be a farce, according to Dr. S. Dana Hubbard. He characterizes the Whitney Drug Control Act as a most heinous regulation "which has bedeviled the entire profession of medicine and pharmacy." Apparently, the only logical method of dealing with the addict is to stop the distribution of drugs and treat the victims in properly equipped hospitals. Police powers may never be developed to the degree of great efficiency, but it is through these agencies that crimes must be diminished.

THE BULLETIN OF VITAL STATISTICS of the State Board of Health of Michigan publishes the statement that the rate of mortality for diseases and conditions associated with childbirth increased during 1920. Although it is stated in explanation that part of the increase in the maternal death rate was due to the accidents of pregnancy, the most unsatisfactory aspect of obstetrical statistics for insured wage earners was due to puerperal sepsis, the rate being 8.4 per 100,000. A slight increase in mortality from puerperal albuminuria and convulsions was also recorded. The better results obtained in Boston and New York City, through nursing service under expert supervision, is referred to.

HOUSE BILL No. 1571, which was proposed as an amendment to Section 27, Chapter 112, of the General Laws, provided that applicants for registration as physicians must be either citizens of the United States or aliens who had made primary declaration of intention to become a citizen thereof; and further provided, that aliens already registered should have certificates of registration revoked if, after seven years, citizenship had not been acquired, has been declared to be unconstitutional by the Attorney General of this Commonwealth. This settles a question which has been the occasion of some controversy, for in the past the useful effect of a law of this character was apparent in a few cases. The question of the propriety of the general application was always raised.

The National House has recently passed a bill to limit immigration of aliens in the United States to 3% of the number of foreign born persons of such nationality in the United States. This is substantially the same bill which was vetoed by President Wilson.

THE AMERICAN COLLEGE OF SURGEONS, in conformity with its policy of organizing state branches, has established the Massachusetts Section of the Clinical Congress of The American College of Surgeons.

The first meeting of this Section will be held in Springfield on the thirteenth and fourteenth of May, inst.

An attractive program has been arranged. Morning sessions of both days will be given over to clinical exercises in the hospitals of Springfield. One of the afternoon sessions will be devoted to a consideration of a plan of the College with reference to Hospital Standardization. To this session the medical profession, all hospital managers, superintendents and other officials are invited. The other afternoon session will be devoted to scientific subjects of surgical importance. Three or four papers will be read.

There will be an evening meeting to which laymen will be invited. Addresses relating to the purpose of the College in improving hospital standards and facilities will be of interest to all who are interested in, or associated with, hospital organizations. This will be an especially valuable feature of these meetings and will bring forward the main object of hospital work, which is service for the people.

First Smallpox Death.—Buffalo has just had its first death from smallpox in ten years. Alton Miller, age 20 years, single, white, came from Teness, Ill., had never been vaccinated and became ill soon after his arrival in this city; coming from a territory at present filled with smallpox. He died March 7.

In 1919 New York State had 191 cases of smallpox. In the same year Michigan had 2460 cases. New York has three times as many people as Michigan. In proportion to population, for every case in New York there were 39 in Michigan. From 1914 to 1918 there were 18 cases in Michigan to every one in New York. New York is a vaccination state; Michigan is not.—*Buffalo Sanitary Bulletin.*

The Nation's Health.—With the May issue the name of this magazine will be changed from *Modern Medicine* to the *Nation's Health.* This is being done to make the title more clearly descriptive of the present scope and the new and greatly enlarged service of the magazine in health promotion and conservation.

The change is one which has been under consideration for some time. It is the final step in the development of a magazine which we confidently expect will be of distinctive service to those who are in positions of responsibility for the nation's greatest asset, the health of its citizens.

The change of name and the broadening of its field of endeavor complete the transformation of the *Interstate Medical Journal,* the predecessor of *Modern Medicine,* from a publication devoted to clinical medicine, to a health magazine of broad national service—a magazine devoted to community, industrial and institutional health problems.

The *Nation's Health* will continue those features which have proved most interesting and serviceable to the readers of *Modern Medicine,* but will cover the subjects treated more completely and in addition inaugurate other features which are important in the new and wider field.

The Eyesight Conservation Council was convened Tuesday, February first at the Biltmore Hotel. An address was given by Dr. Thomas D. Wood of Teachers' College, Columbia University. The subject of defective vision was discussed by Dr. Cassius D. Westcott, Mr. R. C. Auguston, Mr. Bailey A. Burrett. The important assertion was that accuracy of vision has a vital relationship to integrity or obliquity, both in the fields of vision and morals, that not more than one-third of the 24,000,000 school children in the United States receive adequate test of vision and that not more than one-third of those tested have defects of vision adequately corrected, that loss of efficiency due to defective vision is of great economic importance, and that ninety per cent. of school children's eyes are imperfect. The suggested remedy was to have a demonstration of the benefit resulting from intensive study and the application of remedial measures in some representative school and the results placed before all school authorities.

BOSTON AND MASSACHUSETTS.

A Staff Clinical Meeting was held in the lower Out-Patient Amphitheatre, Massachusetts General Hospital, Monday, May 2, 1921, at 8 p.m. Program: "Report on Neurological Surgery," Dr. W. J. Mixter, Dr. George Clymer. Dr. C. A. Porter presided. Doctors, nurses and medical students attended.

Dr. Louisa P. Tingley, of Boston, read a paper entitled, "Lighting in the Medical, Dental and Ophthalmological Field," before the Illuminating Engineering Society, in New York, on April 14, 1921.

Registration of Nurses.—At the last meeting of the New England Surgical Society, the following resolution was passed: That the New England Surgical Society, realizing the scarcity of nurses in hospitals and private practice, believe that the situation can be improved by the modification of the requirements for the registration of nurses.

The Board of Registration in Medicine revoked the certificates of registration on April 29, ult., of J. Washington Hill and Thomas E. Walsh, and suspended the registration of Domizio a Costa for one month.

The Bill permitting towns to expend more than $2,000 for nurses has been made an emergency measure and has passed the Senate and House. It will therefore take effect immediately.

Take Notice: The meetings of the A. M. A. are only open to members in good standing. All members of the Massachusetts Medical Society who desire to participate in the exercises should pay the annual dues at once.

Dr. Morton Prince read a paper entitled "The Production of Hallucinating Phenomena," at a stated meeting of the New York Academy of Medicine May 5, 1921.

NEWS FROM DISTRICT SOCIETIES.

At the annual meeting of the Suffolk District Medical Society, held April 27, Dr. John Homans read a paper entitled, "Symptomatology and Operability of Cancer of the Large Intestine According to Its Location." The following officers were elected: President, F. B. Lund, M.D.; Vice-President, J. W. Bartol, M.D.; Secretary, R. H. Miller, M.D.; Treasurer, D. J. Bristol, M.D.; Commissioner of Trials, Channing Frothingham, Jr., M.D.; Councillor for Nominating Committee, W. C. Howe, M.D.; Alternate, W. H. Robey, Jr., M.D.; Librarian, W. P. Coues, M.D.; Committee on Supervision, A. L. Chute, M.D., F. W. Stuart, M.D.; Committee on Social Meetings, J. M. Gallison, M.D.; H. F. Day, M.D.; A. A. Hornor, M.D.; A. W. Allen, M.D.; Censors, C. M. Smith, M.D.; G. B. Fenwick, M.D.; T. J. O'Brien; J. S. Stone, M.D.; R. H. Vose, M.D.; Councillors, J. L. Ames, M.D.; S. H. Ayer, M.D.; J. W. Bartol, M.D.; V. Y. Bowditch, M.D.; R. Bonney, M.D.; J. T. Bottomley, M.D.; E. G. Brackett, M.D.; J. E. Briggs, M.D.; F. J. Cotton, M.D.; E. G. Crockett, M.D.; L. J. Cummins, M.D.; L. Davis, M.D.; C. Frothingham, M.D.; W. J. Gallivan, M.D.; J. E. Goldthwaite, M.D.; G. S. Hill, M.D.; W. C. Howe, M.D.; J. C. Hubbard, M.D.; H. Jackson, M.D.; D. F. Jones, M.D.; E. A. Locke, M.D.; F. T. Lord, M.D.; F. B. Lund, M.D.; B. H. Metcalf, M.D.; R. H. Miller, M.D.; J. J. Minot, M.D.; F. S. Newell, M.D.; E. H. Nichols, M.D.; B. W. Pond, M.D.; E. Reynolds, M.D.; W. H. Robey, Jr., M.D.; S. Rushmore, M.D.; D. D. Scannell, M.D.; C. L. Scudder, M.D.; C. M. Smith, M.D.; M. Standish, M.D.; J. S. Stone, M.D.; E. W. Taylor,, M.D.; L. P. Tingley, M.D.; F. H. Williams, M.D.

G. W. Brewster, M.D., *Chrm.*
H. B. Loder, M.D.
J. W. Cummin, M.D.
R. L. DeNormandie, M.D.
A. H. Crosbie, M.D.
Nominating Committee.

The Berkshire District Medical Society held its annual meeting in North Adams, April 27, at which Dr. Walter E. Fernald, of Waverly, gave an extremely interesting talk on "The Feeble-Minded Child." The following officers were elected for the ensuing year: Dr. George H. Thompson, of North Adams, President; Dr. M. H. Walker, Jr., Secretary; and Dr. Charles T. Leslie, Treasurer; the Councillors being the President, Dr. Henry Colt, and Dr. B. W. Paddock, Dr. P. J. Sullivan, of Dalton, and Dr. A. P. Merrill.

The popularity of Dr. Frederick T. Lord's lectures in the Worcester Extension Course of the Harvard Graduate School of Medicine has been such as to make possible five extra lectures, arranged as follows: April 27, "Industrial Medicine" (illustrated), Dr. Harry Linenthal; May 4, "Industrial Medicine," Dr. Wade Wright; May 11, "Pediatrics," Dr. Lewis W. Hill; May 18, "Diabetes," Dr. Elliott P. Joslin; May 25, "Asthma," Dr. I. Chandler Walker. These lectures, held, as the others, in the King Street building of the Worcester City Hospital.

Dr. Charles L. Nichols has resigned from the presidency of the Worcester Associated Charities in order to devote more of his time to the larger field as president of the Worcester Welfare Association, which includes some thirty of the charitable organizations of the city.

The annual meeting of the Franklin District Medical Society was held May 10, 1921, at 6.30 p.m., at the Mansion House, Greenfield. Papers were read under the titles, "Broncho-pneumonia in Young Children," by Dr. H. N. Horn, and "Encephalitis Lethargica," by Dr. A. Johnson.

Miscellany.

THE SO-CALLED CURE FOR TUBERCULOSIS.

Dr. John B. Hawes, 2nd, recently elected President of the Boston Tuberculosis Association, writes as follows, concerning the new cure for tuberculosis, and claims made for it by its inventor, Dr. Henry Spahlinger, of Switzerland:

"There has been considerable notice made in the public press of Europe and of this country, and likewise in the medical journals, concerning a so-called remedy for tuberculosis recently discovered by Dr. Henry Spahlinger, a Swiss bacteriologist. This alleged discovery is a product made from the bodies of the germs of tuberculosis, to which attention was first called in 1892 by the late Robert Koch, of Berlin. Although, at that time, Dr. Koch's claims for it were not excessive, it was looked upon, however, as a cure for consumption with the result that countless tragedies were caused. Tuberculin as a therapeutic agent fell into disrepute for many years afterwards, although at Saranac Lake and elsewhere, by men of the school of Dr. Edward L. Trudeau, experiments as to its efficacy were being carried on. It was again called to the attention of the world by Dr. Friedman, a German bacteriologist, who claimed to have discovered, with a turtle serum, a real cure for tuberculosis. His serum was nothing more than another form of tuberculin made from a mild strain of tubercle bacillus as found in cold blooded animals. Our experience in this State with Dr. Friedman's "turtle soup," as it came to be called, is too vivid and, to many, too bitter to need further comment, and now once more, Dr. Spahlinger has introduced a form of tuberculin for which somewhat extravagant claims are made.

The Boston Tuberculosis Association would urge most seriously that the public put absolutely no faith in this so-called cure for tuberculosis, as it stands at present. Only after it has been given a careful and painstaking trial in the hands of scientists, at our best medical schools, sanatoria and hospitals, such as the Rockefeller Institute, the Harvard Medical School, and the Saranac Lake Laboratory, will we be in a position to judge as to its efficacy. The tragic results following the Friedman episode, which are still fresh in our minds, must not be duplicated. A sane and sound skepticism should be the attitude of everyone of us in this regard.

RESOLUTIONS ON THE DEATH OF DR. WILLIAM FISKE WHITNEY.

The Obstetrical Society of Boston records its sense of great loss in the death of Dr. William Fiske Whitney. A member of the Society since April 19, 1898, he was most constant in attendance and most devoted to its interests.

Always ready to take helpful part in the discussion of papers presented, and in the friendly good fellowship in the meetings, he will be long remembered and his loss keenly felt by the members of the Society.

A pioneer in his special line of work, an invaluable aid to a generation of surgeons and obstetricians, he made countless patients his unknown debtors. As curator and upbuilder of a great museum, he was the friend and helper of hundreds of students.

It is not easy, under present conditions, to appreciate the true value of a man so unassuming; yet he was honored, respected and beloved alike in school and hospital, and especially in this Society, because of his useful service so modestly rendered, and because of his friendly interest in our welfare.

Alfred Worcester,
J. S. Stone,
Committee.

Correspondence.

NON-RESIDENT MEMBERS OF THE MASSACHUSETTS MEDICAL SOCIETY.

Philadelphia, April 27, 1921.

Mr. Editor:—

I wish to commend the suggestion made in a recent number of the Journal in regard to the burden carried by non-resident members of the Society.

Many of us, who are living in places remote from New England, but who wish to retain our membership in the Society because of former associations, and who also desire to continue our subscription to the Journal, feel that some plan should be devised whereby we could enjoy non-resident privileges of the Society.

In this regard, I would like to suggest that the Society adopt a plan similar to that in vogue in the local medical societies of Pennsylvania, whereby non-resident members pay one half the dues required from resident members.

Yours very truly,
Albert S. Hyman, M.D.,
Superintendent, Mt. Sinai Hospital, Philadelphia.

LIABILITY INSURANCE FOR DOCTORS BY THE MASSACHUSETTS MEDICAL SOCIETY.

Springfield, Mass., April 28, 1921.

Mr. Editor:—

Your editorial of April 21, on Malpractice Liability Insurance, deserves a reply. The reason that so many physicians have taken out this insurance is perfectly obvious in view of the fact that, although The Massachusetts Medical Society provides a lawyer to defend us, it bows itself out of any responsibility for the verdict.

It is, perhaps, true, that the Society wins as many of its cases as the insurance companies, but the fact that the cases lost are increasing is at the bottom of this increase in rates.

Under these circumstances, I do not see how we can afford to leave to The Massachusetts Medical Society the protection of our interests.

I see no reason, however, why the Society should not form a mutual protective company and issue real protection to its members at far less cost than we have to pay now, since we are now not only paying for our own protection, but are also paying for the protection of every charlatan in the state.

Very truly yours,
EOLINE C. DUBOIS, M.D.

NEWBURYPORT MEDICAL CLUB DEPLORES PASSING OF ANTI-VACCINATION BILL BY THE SENATE.

Mr. Editor:—

On Monday, April 4, 1921, the Massachusetts Senate passed, to be sent to the House, a bill which practically means that compulsory vaccination against smallpox be abolished.

All intelligent people know that the present comparative immunity to smallpox enjoyed by the world is the direct result of vaccination.

To be sure, we occasionally have smallpox, but it invaraibly arises among the unvaccinated.

Where vaccination has been allowed to lapse, just as soon as smallpox develops, an epidemic is inevitable.

The misguided, meddlesome, would-be reformers who protest against vaccination do not know, or refuse to realize, the great danger courted by omitting vaccination. This ignorance of, or refusal to acknowledge, well established scientific facts is based partly on the present immunity, which is the result of previous years of vaccination.

The Newburyport Medical Club wishes to place itself on record as firmly opposed to the passage of any bill which will lower the general public health, as this one of April fourth must do.

Furthermore, the Newburyport Medical Club regrets that its own state senator should have been so unwise as to have voted in favor of this bill.

ARTHUR J. HEWETT, *Secretary*,
Newburyport Medical Club.

A CORRECTION.

Boston, Mass, May 6, 1921.

Mr. Editor:—

I understand that of late my name has been used in connection with the financing of the so-called Hospital Corporation. Will you be good enough to publish in the JOURNAL the fact that I have no connection, financially or otherwise, with that concern?

Very sincerely,
JOHN T. BOTTOMLEY.

EARLY REGISTRATION URGED.

Registration booth for the annual session of the American Medical Association will be open at 9 o'clock on Monday, June the sixth. It is expected that the greater part of the Boston profession and a considerable proportion of the profession of New England will register on this day in order to relieve the congestion which is sure to occur on the following days of the session.

Yours very truly,
A. S. LEGG.

NOTICES.

EXAMINATION BY THE NATIONAL BOARD OF MEDICAL EXAMINERS.

The National Board of Medical Examiners will hold an examination in Boston, June 14 to 21, inclusive.

Subjects: Anatomy, Clinical Physiology, Physiological Chemistry, Pathology, Bacteriology, Materia Medica and Therapeutics, Medicine, Surgery, Obstetrics and Gynecology, Hygiene and Sanitation. The certificate of the National Board is accepted as equivalent to a professional examination by the Federal Services and a large majority of State Medical Examining Boards.

Eligibility for examination: A four-year high school course, two years of acceptable college work, including physics, chemistry, biology and a modern foreign language; graduation from a Class A medical school, and one year as interne in an acceptable hospital or laboratory; application for examination will be considered from interne who had completed at least six months of interne service.

Applications should be made before May 25, to allow for proper investigation of credentials.

Information and application forms may be obtained from Dr. Horace D. Arnold, 520 Commonwealth Avenue, Boston. Dr. Arnold may be seen at his office from 4 to 5, Mondays, Wednesdays and Fridays, until May 25, or by appointment.

BOSTON ASSOCIATION OF CARDIAC CLINICS.—Dr. Robert H. Halsey of New York, Secretary of the Association for Prevention and Relief of Heart Disease, will give an address in the Amphitheatre of the Boston City Hospital, Friday, May 20, 1921, at 8.15 o'clock. His subject will be "Work of the New York Association of Cardiac Clinics."

The meeting has been arranged by a committee of the Boston Association of Cardiac Clinics. All physicians and social service workers interested in the problem of heart disease, are invited.

WILLIAM H. ROBEY, M.D., *Chairman*,
P. D. WHITE, M.D., *Secretary*,
GEORGE P. DENNEY, M.D.,
WILIAM D. REID, M.D.,
PAUL W. EMERSON, M.D.,
RICHARD S. EUSTIS, M.D.,
BURTON E. HAMILTON, M.D.

BOSTON CITY HOSPITAL.—Staff Clinical Meeting, Cheever Surgical Amphitheatre, Friday, May 27, 1921, at 8.15 P.M.

1. Some Aspects of the Functional Pathology of Lobar Pneumonia. Speakers: Thomas E. Buckman, M.D., 15 minutes; F. Dennette Adams, M.D., 10 minutes; Harold T. Edwards, M.D., 10 minutes. Discussed by James Means, M.D.
2. Studies in Cutaneous Reactions in Pneumonia. Speaker: George H. Bigelow, M.D., 15 minutes.
3. Studies in Immunity in Pneumonia. Speakers: W. L. Moss, M.D., and L. H. Ferguson, M.D., 15 minutes.
4. Studies in Pneumonia in Children. Speaker: Arthur B. Lyon, M.D., 10 minutes.

Physicians and medical students invited. Open discussion. Dr. Edwin A. Locke will preside.

DR. H. ARCHIBALD NISSEN,
DR. HALSEY B. LODER,
Committee.

BETH ISRAEL HOSPITAL.—There will be a clinical meeting in the auditorium of the Beth Israel Hospital on Wednesday evening, May 11, at 8.15.

PROGRAM

Lung Abscess. Dr. Wyman Whittemore.

Discussion. Dr. E. A. Locke, Dr. L. M. Freedman, Dr. S. A. Robins.

Physicians are cordially invited. The telephone is Roxbury 5940 and visitors may be on call.

E. GRANVILLE CRABTREE, M.D., *Secretary*.